



Water-Data Report 2008

12090500 CLOVER CREEK NEAR TILLCUM, WA

Puget Sound Basin
Puget Sound Subbasin

LOCATION.--Lat 47°08'46", long 122°30'33" referenced to North American Datum of 1927, in NW ¼ SE ¼ sec.11, T.19 N., R.2 E., Pierce County, WA, Hydrologic Unit 17110019, at Pacific Highway SW, in Lakewood, 2.5 mi northeast of Tillicum.

DRAINAGE AREA.--73.8 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--June 1949 to September 1954, October 1959 to September 1970 (annual maximums only), October 1990 to September 1992, October 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 250 ft above NGVD of 1929, from topographic map. Prior to October 22, 1999, at Bridgeport Way, ¼ mi upstream, at various datums.

REMARKS.--No estimated daily discharges. Records fair except for flows below 10 ft³/s, which are poor.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--21 years (water years 1950-54, 1991-92, 1995-2008), 40.1 ft³/s, 7.38 in/yr, 29,020 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 568 ft³/s, Feb. 12, 1991, gage height, 5.71 ft (datum then in use); no flow for many days in 1949, 1952-53, 2001-06, 2008.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 91 ft³/s, Dec. 3, 4, gage height, 15.95 ft; minimum discharge, no flow Sept. 18, 19, 26-30.

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12090500 CLOVER CREEK NEAR TILLCUM, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1 | 4.8 | 6.7 | 8.2 | 46 | 61 | 51 | 44 | 29 | 14 | 5.3 | 2.3 | 0.59 |
| 2 | 13 | 6.2 | 24 | 50 | 61 | 48 | 43 | 28 | 14 | 4.9 | 1.7 | 0.50 |
| 3 | 6.3 | 5.8 | 68 | 52 | 59 | 46 | 41 | 28 | 17 | 4.4 | 1.6 | 0.47 |
| 4 | 4.8 | 5.1 | 78 | 52 | 56 | 45 | 40 | 28 | 14 | 3.7 | 1.5 | 0.37 |
| 5 | 4.1 | 4.7 | 72 | 52 | 57 | 44 | 40 | 27 | 15 | 3.7 | 1.2 | 0.30 |
| 6 | 3.9 | 4.4 | 62 | 48 | 60 | 41 | 42 | 24 | 17 | 3.9 | 1.1 | 0.24 |
| 7 | 5.9 | 4.1 | 52 | 47 | 66 | 40 | 43 | 24 | 16 | 3.6 | 0.96 | 0.19 |
| 8 | 4.2 | 3.7 | 42 | 52 | 68 | 40 | 42 | 24 | 15 | 3.1 | 0.77 | 0.17 |
| 9 | 3.7 | 4.0 | 37 | 53 | 71 | 39 | 41 | 24 | 15 | 2.5 | 1.4 | 0.13 |
| 10 | 5.7 | 6.3 | 34 | 62 | 71 | 39 | 39 | 23 | 15 | 2.3 | 1.3 | 0.10 |
| 11 | 3.8 | 3.7 | 33 | 69 | 68 | 40 | 38 | 22 | 14 | 2.0 | 1.1 | 0.07 |
| 12 | 3.7 | 7.0 | 31 | 69 | 66 | 39 | 38 | 21 | 14 | 1.9 | 0.63 | 0.16 |
| 13 | 3.6 | 3.8 | 30 | 65 | 63 | 44 | 38 | 22 | 14 | 2.0 | 0.49 | 0.29 |
| 14 | 3.4 | 3.6 | 29 | 63 | 62 | 52 | 37 | 21 | 14 | 2.0 | 0.43 | 0.32 |
| 15 | 3.8 | 6.3 | 31 | 62 | 60 | 52 | 37 | 20 | 13 | 2.0 | 0.34 | 0.32 |
| 16 | 3.4 | 5.8 | 29 | 60 | 59 | 47 | 36 | 18 | 12 | 2.0 | 0.32 | 0.13 |
| 17 | 4.1 | 11 | 28 | 58 | 59 | 45 | 36 | 18 | 11 | 2.7 | 0.29 | 0.02 |
| 18 | 5.4 | 7.0 | 31 | 56 | 58 | 44 | 35 | 17 | 11 | 3.1 | 0.70 | 0.01 |
| 19 | 11 | 7.8 | 40 | 54 | 57 | 41 | 34 | 17 | 10 | 2.4 | 0.51 | 0.13 |
| 20 | 19 | 7.2 | 47 | 53 | 56 | 40 | 33 | 20 | 10 | 2.9 | 3.9 | 0.30 |
| 21 | 10 | 7.3 | 42 | 52 | 54 | 40 | 33 | 18 | 10 | 3.4 | 2.9 | 0.24 |
| 22 | 9.5 | 6.6 | 40 | 50 | 53 | 40 | 33 | 18 | 9.8 | 3.1 | 0.62 | 0.05 |
| 23 | 9.1 | 6.2 | 47 | 49 | 52 | 45 | 35 | 18 | 10 | 2.9 | 0.59 | 0.03 |
| 24 | 9.0 | 6.0 | 54 | 47 | 50 | 46 | 33 | 17 | 8.6 | 2.4 | 1.6 | 0.02 |
| 25 | 8.7 | 5.6 | 50 | 46 | 49 | 43 | 32 | 17 | 7.6 | 2.1 | 1.3 | 0.02 |
| 26 | 8.2 | 7.2 | 45 | 46 | 48 | 47 | 31 | 17 | 7.3 | 2.3 | 0.71 | 0.00 |
| 27 | 8.1 | 6.7 | 45 | 47 | 47 | 49 | 31 | 16 | 7.5 | 2.3 | 1.4 | 0.00 |
| 28 | 7.9 | 7.4 | 50 | 46 | 46 | 52 | 32 | 15 | 7.1 | 2.2 | 0.76 | 0.00 |
| 29 | 7.7 | 8.0 | 51 | 48 | 47 | 55 | 30 | 14 | 6.3 | 2.0 | 0.71 | 0.00 |
| 30 | 7.4 | 6.6 | 54 | 51 | --- | 51 | 28 | 15 | 5.9 | 2.0 | 0.63 | 0.00 |
| 31 | 7.0 | --- | 51 | 56 | --- | 47 | --- | 14 | --- | 1.7 | 0.60 | --- |
| Total | 210.2 | 181.8 | 1,335.2 | 1,661 | 1,684 | 1,392 | 1,095 | 634 | 355.1 | 86.8 | 34.36 | 5.17 |
| Mean | 6.78 | 6.06 | 43.1 | 53.6 | 58.1 | 44.9 | 36.5 | 20.5 | 11.8 | 2.80 | 1.11 | 0.17 |
| Max | 19 | 11 | 78 | 69 | 71 | 55 | 44 | 29 | 17 | 5.3 | 3.9 | 0.59 |
| Min | 3.4 | 3.6 | 8.2 | 46 | 46 | 39 | 28 | 14 | 5.9 | 1.7 | 0.29 | 0.00 |
| Ac-ft | 417 | 361 | 2,650 | 3,290 | 3,340 | 2,760 | 2,170 | 1,260 | 704 | 172 | 68 | 10 |
| Cfsm | 0.09 | 0.08 | 0.58 | 0.73 | 0.79 | 0.61 | 0.49 | 0.28 | 0.16 | 0.04 | 0.02 | 0.00 |
| In. | 0.11 | 0.09 | 0.67 | 0.84 | 0.85 | 0.70 | 0.55 | 0.32 | 0.18 | 0.04 | 0.02 | 0.00 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2008, BY WATER YEAR (WY)

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Mean | 3.86 | 13.4 | 49.6 | 86.9 | 101 | 87.2 | 62.9 | 37.7 | 22.2 | 11.5 | 4.74 | 2.78 |
| Max | 13.8 | 37.0 | 119 | 232 | 279 | 196 | 133 | 78.5 | 42.1 | 26.9 | 12.5 | 11.5 |
| (WY) | (1998) | (1991) | (1951) | (1997) | (1951) | (1997) | (1991) | (1996) | (1996) | (1996) | (1996) | (1997) |
| Min | 0.00 | 0.00 | 0.00 | 13.4 | 14.8 | 15.3 | 22.8 | 12.3 | 7.31 | 1.75 | 0.41 | 0.00 |
| (WY) | (1953) | (1953) | (1953) | (2001) | (2001) | (2001) | (2001) | (2004) | (2004) | (2004) | (2004) | (2003) |

12090500 CLOVER CREEK NEAR TILLCUM, WA—Continued**SUMMARY STATISTICS**

| | Calendar Year 2007 | Water Year 2008 | Water Years 1949 - 2008 | |
|---------------------------------|---------------------------|------------------------|--------------------------------|--------|
| Annual total | 16,718.1 | 8,674.63 | | |
| Annual mean | 45.8 | 23.7 | 40.1 | |
| Highest annual mean | | | 81.9 | 1997 |
| Lowest annual mean | | | 9.72 | 2001 |
| Highest daily mean | 305 | Jan 9 | 78 | Dec 4 |
| Lowest daily mean | 1.3 | Sep 27 | 0.00 | Sep 26 |
| Annual seven-day minimum | 1.5 | Sep 21 | 0.01 | Sep 24 |
| Annual runoff (ac-ft) | 33,160 | | 17,210 | 29,020 |
| Annual runoff (cfsm) | 0.621 | | 0.321 | 0.543 |
| Annual runoff (inches) | 8.43 | | 4.37 | 7.38 |
| 10 percent exceeds | 114 | | 54 | 104 |
| 50 percent exceeds | 22 | | 15 | 20 |
| 90 percent exceeds | 3.7 | | 0.59 | 1.1 |

